Short Communication

RIGHT DISPLACEMENT OF ABOMASUM IN A HOLSTEIN FRIESIAN CROSS BRED CATTLE: CLINICOPATHOLOGICAL, ULTRASONOGRAPHIC AND POST MORTEM FINDINGS

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ABSTRACT

Displacement of the abomasum is one of the important incidence recorded in dairy cattle especially after calving that lead to huge economic loss. A six year old Holstein Friesian female cow calved fifteen days back was presented to the Large Animal Outpatient Unit, Teaching Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal with the history of not voiding dung and anorexia for past three days. The animal was fed with corn and ragi feed. Clinical examination revealed pale pink mucous membranes, right side distension of abdomen, ping sound on right paralumbar fossa to 11th intercostal space on simultaneous auscultation and percussion. On rectal examination balloon like structure was noticed and the liptak test revealed pH of 2. Ultrasonographic examination of abomasal contents and post mortem examination confirmed RDA.

Keywords: Liptak test, Ping sound, Right displacement of abomasum

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Abomasal displacement is one of the common digestive disorder recorded in dairy cows, commonly after calving (El-Deen *et al.,* 2014). Left displacement of the abomasum was the often reported than right displacement and was associated with multifactorial etiology (Constable *et al*., 1992). Feeding large amounts of grain with limited exercise appears to be the primary causative factor that results in the atony of the abomasum (Breukink *et al*., 1976). This abomasal atony will be followed by disturbed abomasal evacuation of contents and gas accumulation leading to its displacement (Doll *et al*., 2009). Early post calving period is considered important in its occurrence, as hypocalcaemia, negative energy balance and metritis that

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develop during this stage plays a major role in its pathogenesis (Shaver *et al*., 1997). Clinical findings of abomasum displacement include in appetence, anorexia, marked drop of milk yield, varying degree of ketosis and tinkling sounds on auscultation (Mokhber *et al*., 2013).

Medial displacement of liver is another prominent finding noticed ultrasonographically (Braun *et al*., 2003) and hypochloremic- hypokalaemic metabolic alkalosis, increased bicarbonate ion concentration and a base excess will be recorded in abomasal displacement (Constable *et al*., 2009). Presence of ping and splashing sounds during simultaneous auscultation and percussion on the right abdominal wall at the level of 10^{th} to 13^{th} ribs is used as a most valuable tool in the diagnosis of RDA apart from abdominal ultrasound.

The aim of this case study is to presenta case with right side displacement of the abomasum in a six-year-old Holstein Friesian crossbred cow and its associated clinical, ultrasonographical and post mortem findings. A six-year-old recently calved Holstein Friesian crossbred cow was presented to Large Animal Medicine Outpatient unit, Veterinary College and Research Institute, Namakkal with the history of anorexia, that was fed with corn, ragi flour two days back and absence of defecation. The animal was found dull and depressed on gross examination. Clinical observation revealed distension of abdomen on right paralumbar fossa (Fig. 1). Physical examination revealed tachycardia (85/min), tachypnoea (38/min), ping sound on combined auscultation and percussion. Balloon like structure was felt on per rectal examination at the level of dorsal right paralumbar fossa. On Liptak test, abomasal fluid was obtained which was found to have pH of 2 and absence of protozoa (Fig. 2). Hematobiochemical examination revealed leucocytosis (17.61x/µl), neutrophilia (90 %), hypokalaemia (2.1 m Eq/L), hyperglycaemia (150 mg/dl) and hypochloraemia (104.17m Eq/L). Ultrasonographic examination was performed in standing position by using Esoate Mylab 40 Vet Ultrasound system and the gastrointestinal system was examined with 2.0 – 3.5 MHz transducer. Normal reticular contractions and abomasum filled with echogenic ingesta was found at right 11^{th}intercoastal space (Fig. 3). Animal succumbed on same day of presentation and post mortem examination revealed distension of abomasum in right dorsal at 12th and 13th intercostal space.

The clinical findings tachycardia, ping and splashing sound on auscultation and percussion of the right part of the abdomen were also similar to the previous studies (Radostits *et al.,* 2007; Atlan *et al.,* 2012). Present history of concentrates feeding before its development reiterates the role of high concentrate feed in abomasal displacement. Feeding of concentrate rich ration produces higher volatile fatty acids in the rumen which further cause abomasal hypomotility as reported by Aslan *et al.* (1997) and Çeçen (2012). This also increases osmotic pressure in the abomasum and results in the extracellular fluid to move into the rumen, which cause dilatation. Haematobiochemical

Fig.1 Right side distension of abdomen

Fig. 2 Liptak test right side abdomen12th ICS, 8thICS and abomasal fluid, PH 2)

alterations seen in the present case was in accordance with findings of Yurdakul and Aydogdu (2018). Hypokalemia was related to potassium ions passing into the cell as a consequence of alkalosis (Sahinduran and Albay, 2006) and leucocytosis as a result of an immunological response related to endotoxemia, peritonitis and abomasitis (Maden *et al.,* 2012) and probably be related to endotoxaemia in the present case.

On abdominal ultrasound, abomasum can easily be visualised on the right side in cattle and calves with RDA (Atlan *et al.,* 2012) as it appears dilated and can easily be separated from other organs due to its content, apart from altered position of the liver (Ok *et al.,* 2002). Ultrasound findings in the present animal corroborated with the findings reported by above authors.

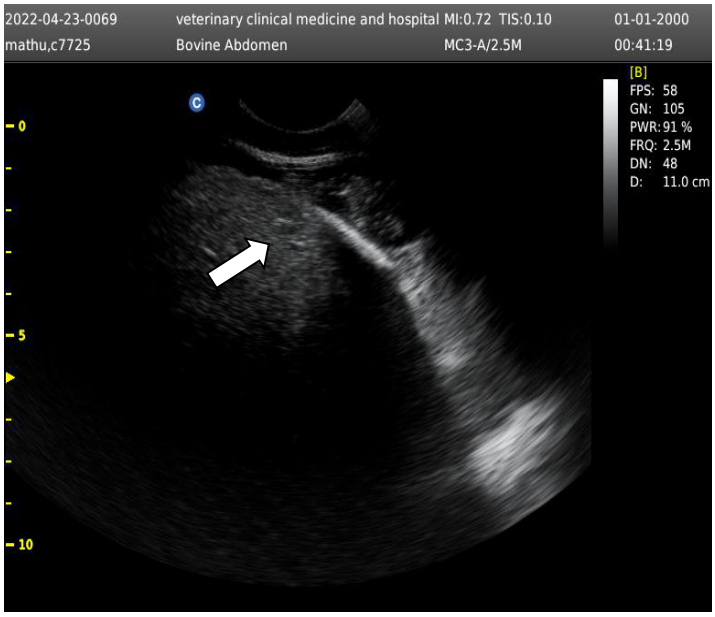

Fig. 3 Ultrasonography of right side of abomasum filled with echogenic ingesta

Fig. 4 Ballooning of abomasum in right side of the abdomen

In the present case nature of acute onset with delayed presentation as well as transportation induced stress could have resulted in animal succumbing within short time of presentation. Post mortem examination done as per standard protocol and its findings confirmed the case as right side abomasal displacement.

In conclusion, ultrasonographical examination can be a reliable tool for definitive diagnosis of right side abomasal displacement and appropriate feeding management is necessary during first three to six weeks post parturition to prevent it.

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